CONTAINER WITH COVER

Field of the Invention

This invention relates to the field of portable insulated containers.

Background of the Invention

Soft sided insulated containers have become popular for carrying either articles that may best be served cool, such as beverages or salads, or warm, such as appetizers, hot dogs, and so on. Such containers are frequently used to carry liquids, whether hot liquids, such as soup containers, coffee or tea, or cold liquids such as beer, soft drinks, or other carbonated beverages, juices and milk. The containers are typically made in a generally cube-like or rectangular parallelepiped shape, whether of sides of equal length or not, having a base, four upstanding walls, and a top. The top is generally a lid which opens to permit articles to be placed in, or retrieved from, the container.

While soft sided containers are, in general, quite convenient, the flexible structure may not provide adequate protection for items stored within the container. For example, sandwiches or other non-durable items may become crushed or squished when the container is carried or otherwise transported. It may be desirable that other objects that may be carried in a cooler, such as, for example, egg sandwiches or cucumber sandwiches, or items of a similar nature for a picnic, be kept cool before being eaten. Alternatively, if one has warmed canapés or hors d'oeuvres, it may be desirable that those appetizers be kept warm until served. However, such items as sandwiches or pastries may tend not to be overly amenable to immersion in water, and, even if placed in a supposedly waterproof bag or plastic container may tend to become damp or clammy. Further, sandwiches or appetizers tend not to be particularly resilient, and once squashed may tend not to return to their former state.

To alleviate this problem, a rigid insert such as a plastic receptacle, which may conform to the interior walls of the soft sided container, may be used to impart structural rigidity to the soft sided container. As a result of this increased rigidity, items placed within the rigid insert may be less apt to be affected by bumps or other forces applied to the soft sided container.

While items placed within the rigid insert may be provided with a measure of protection from external forces, they may be adversely affected by other items located within the rigid insert. For example, more durable items such as bottles and cans, may come into contact with less durable items such as sandwiches and buns when the items are jostled during transport of the container. This could cause the less durable items to become damaged.

The contents of items such as soft drink or beer bottles, may also be affected. As the container is moved, any item contained therein may move, and contact a side of the rigid receptacle, or contact other items located within the container. This movement may lead to damage or breakage of the items themselves. Movement may also cause the contents of durable items such as soft drink and beer bottles to become agitated, causing the contents of such items to be expressed in an undesirable spray when opened.

Another possible disadvantage of such soft sided containers is that contained items may tip or fall from a preferred orientation when the container is moved. For example, a cork partially inserted into the spout of a previously opened wine bottle may become dislodged if the bottle is knocked from a generally vertical orientation to a generally horizontal orientation. As a result, the contained wine may be released within the rigid insert, contaminating both the insert and any other items located therein.

For all of these reasons, in addition to providing a stiff reinforcement to protect contents from damage due to external causes, it may also be desirable to have an internal bracing or reinforcement member to aid in the protection of the various objects to be protected from each other.

Further still, in soft sided coolers heretofore, the closure of the lid has tended to depend on the closing of a zipper, often a zipper running around three sides of a rectangle, with the fourth side being hinged. The lid may rest on a foam lip or bad. When a container of this nature falls over, its resistance to the spilling of liquid through the closure may not be as effective as might be desired. It might be advantageous to have a somewhat tighter seal, such as might be made by stiffer materials in an interference fit. A soft-sided panel would not normally be sufficiently stiff to achieve such a seal. The use of a seal in this nature, might also permit the elimination of the main peripheral zipper of the main closure of the container.

Further, it may be advantageous to provide a mounting for a thermal storage device, such as a ice pack or an exothermic package, that could be carried in the container. It would be advantageous for the thermal storage element to be removable, to permit it to be re-frozen in the freezer or refrigerator, or reheated, or recharged, as the case may be. Alternatively, it may be desirable to be able to choose between a number of various positions for the thermal storage element, depending on what might be carried in the insulated container. That is, in some cases it might be desirable to have the thermal storage element below objects in the insulated, sometimes above, and sometimes in the middle. Further still, it might be advantageous to be able to remove the thermal storage element from the insulated container entirely, and to use it as a flat surface upon which to serve or eat objects taken out of the container. This role might be advantageously enhanced by forming a recess, or recesses in the thermal storage element such as might be used as drink holders, or retainers for drinks or other objects, to prevent them from sliding in the event the surface is not precisely level (as may be the case on a picnic, or in a vehicle, or from spilling if jostled slightly, in the event the vehicle is moving). Further still, it may be advantageous to permit the thermal storage element to be held in the lids of the container when the container is open, to serve either of the above mentioned roles.

Summary of the Invention

In an aspect of the invention there is an insulated container assembly. The insulated container assembly has a first portion and a second portion co-operable therewith. The first portion has a soft-sided insulated wall structure and a receptacle therein. The receptacle has an opening, and the opening has a land adjacent thereto. The second portion is movably connected to the first portion. The second portion includes a closure member operable to control access to the receptacle. The closure member includes a stiffened member operable to engage the land in an interference fit.

In another feature of that aspect of the invention, the land and the stiffened member are co-operable to form a seal. In yet another feature, the stiffened member includes a bead and the bead is engageable with the land. In still another feature, the stiffened member is a surround. The receptacle is made of a stiffer material than the soft sided wall structure, and the land is a region of the receptacle extending about the opening. In still yet another feature, when the surround engages the land, hoop stresses are developed in at least one of (a) the land; and (b) the surround. In a further feature,

when the surround engages the land, a compressive hoop stress is generated in one of (a) the land; and (b) the surround, and tensile hoop stresses are generated in the other.

In another feature, the insulated container assembly includes a removable thermal storage element. In yet another feature, the thermal storage element is matingly engageable with the second portion. In still another feature, the thermal storage element is matingly engageable with the stiffened member of the second portion of the insulated container assembly. In still yet another feature, the thermal storage element is alternately locatable in the second portion of the container assembly and in the first portion of the container assembly. In a further feature, when the closure member is in an open position, and the thermal storage member is engaged in the second portion, the thermal storage member presents a support surface for objects withdrawn from the first portion of the container assembly. In still a further feature, the thermal storage member includes a flat surface, and the thermal storage member is movable to permit the flat surface to act as a support surface for objects removed from the first portion of the container assembly.

In yet a further feature, the thermal storage member includes at least one recess formed therein. In still yet a further feature, the thermal storage container has at least one cup-holder recess formed therein. In another feature, the thermal storage container has an internal cavity for containing a thermal storage medium, and the cavity is refillable. In yet another feature, the insulated container assembly has a mechanical attachment element operable to secure the second portion in a closed position relative to the first portion. In still another feature, the insulated container assembly has a grip member by which to urge the stiffened member to a disengaged position relative to the land. In another feature, the land and the stiffened member define an engagement interface of the second portion of the container assembly with the first portion of the container assembly, and the interface is zipperless.

In another aspect of the invention there is an insulated, soft-sided container assembly. The container has a body assembly and a lid assembly hingedly joined to the body assembly. The body assembly includes a soft-sided outer casing and an internal hard-shell receptacle. The receptacle has a mouth. The lid includes a formed structural member having a periphery for mating engagement with the mouth of the receptacle. The structural member is engageable in an interference fit with the mouth of the receptacle.

In another feature of that aspect of the invention, the structural member has a deformable bead mounted thereto for contacting the receptacle. In still another feature, the receptacle includes a receptacle wall region extending peripherally to define the mouth, and when matingly engaged, the structural member is biased toward the peripherally extending wall region of the receptacle. In yet another feature, the insulated container assembly has a removable thermal storage element. The thermal storage element and the structural member of the lid are releasably engageable. In still yet another feature, the thermal storage element is variably positionable within the container assembly. In a further feature, the thermal storage element is variably positionable within a set of positions in the container assembly. The set of positions includes at least a first position releasably engaged with the structural member, and a second position seated in the receptacle.

In still a further feature, the receptacle has a bottom wall and the thermal storage element is positionable in a set of positions within the container assembly. The set of positions includes a first position releasably engaged with the structural member, a second position nested above the bottom wall and a third position intermediate the first and second positions. In another feature, the insulated container assembly has a shelf positionable within the receptacle. In still another feature, the thermal storage element is placeable within the receptacle upon the shelf. In yet another feature, the lid has an outwardly facing surface, and the outwardly facing surface has at least one rebate formed therein for inhibiting movement of objects placed on the lid within the rebates.

In another aspect of the invention there is an insulated soft-sided container assembly. The container assembly has a soft sided insulted wall structure including a base panel, an upstanding sidewall, and a lid. The lid is hingedly mounted to the upstanding sidewall. A receptacle is mounted within the soft sided wall structure. The receptacle is made from a stiffer material than the soft-sided wall structure. The receptacle has a mouth. The lid has a stop for the mouth. The stop is made from a stiffer material than the soft-sided wall structure. The lid is movable between an open position and a closed position to control access to the receptacle. When the lid is in the closed position, the stop is engaged with the mouth in an interference fit.

In another feature of that aspect of the invention, the stop includes a moulded surround member having a peripherally outwardly facing surface. The surface has a contact region, and the surround member is resiliently displaceable on engagement with

the receptacle. In another feature, the surround includes an inwardly facing peripheral surface, and a releasably engageable thermal storage element is mounted inwardly of the inwardly facing peripheral surface.

In another aspect of the invention there is the combination of a thermal storage element and a thermal storage element retention fitting for an insulated container. The container has at least one substantially planar panel, wherein the thermal storage element has a hollow body for containing a thermal storage medium liquid, a port by which to introduce the thermal storage medium liquid into the hollow body, a removable closure member operable to control access to the hollow body, and at least one engagement fitting operable releasably to mate the thermal storage element with the thermal storage retention apparatus. The thermal storage retention apparatus is mounted to form at least a portion of the substantially planar panel.

Brief Description of the Drawings

These aspects and other features of the invention can be understood with the aid of the following illustrations of a number of exemplary, and non-limiting, embodiments of the principles of the invention in which:

Figure **la** shows an isometric view taken from in front, above, and to the left, of an embodiment of a container assembly according to an aspect of the present invention, the container assembly being in a closed position;

Figure **lb** shows the container assembly of Figure **la** in an open, exploded position showing a soft-sided wall structure, a receptacle for seating in the sift-sided wall structure, and a multi-position dividing partition for seating in the receptacle;

Figure **1c** shows the container assembly of Figure **1a** with an auxiliary portion thereof in an open position;

Figure **2a** shows a front view of the container assembly of Figure **la**;

Figure **2b** shows a left hand side view of the container assembly of Figure **la**;

Figure **2c** shows a right hand side view of the container assembly of Figure **la**;

Figure **2d** shows a rear view of the container assembly of Figure **1a**;

Figure **2e** shows a top view of the container assembly of Figure **la**;

Figure **2f** shows a bottom view of the container assembly of Figure **la**;

Figure **2g** shows a partial sectional view of the structure of the container assembly of Figure **1a**;

Figure **2h** shows an alternate multi-position dividing partition for container assemblies similar to the container of Figure **1a**;

Figure **2i** shows an alternate three-panel, two fold, multi-partition dividing partition for the container assembly of Figure **1a**;

Figure **2j** is a perspective view of the multi-position dividing partition of Figure **1b**;

Figure **2k** is a hinge detail of the dividing partition of Figure **2j**;

Figure **2l** is a cross-sectional detail taken on arrow **'2l'** of Figure **2k**;

Figure **3a** shows an isometric view of a receptacle for use in the container assembly of Figure **1a**, taken from above one corner thereof;

Figure **3b** shows an opposite isometric of the receptacle of Figure **3a**;

Figure **3c** shows a side elevation of the receptacle of Figure **3a**;

Figure **3d** shows an end elevation of the receptacle of Figure **3a**;

Figure **3e** shows a top view of the receptacle of Figure **3a**;

Figure **3f** shows a bottom view of the receptacle of Figure **3a**;

Figure **3g** shows an isometric view of the receptacle of Figure **3a** with a multi-position dividing partition mounted therein;

Figure **3h** shows a top view of the receptacle and dividing partition of Figure **3g** with the partition in a substantially planar mid-height position inside the receptacle;

Figure **3i** shows a top view of the receptacle and dividing partition of Figure **3g** with the partition in a half vertical, half horizontal position inside the receptacle;

Figure **3j** shows a top view of the receptacle and dividing partition of Figure **3g** with the partition in a three quarter horizontal, one quarter vertical position inside the receptacle;

Figure **3k** shows a top view of the receptacle and dividing partition of Figure **3g** with the partition in a half horizontal, centered position inside the receptacle with both end quarters oriented vertically;

Figure **3l** shows a top view of the receptacle and dividing partition of Figure **3g** with the partition in a half horizontal, centered position, with one perforated panel portion and one solid panel portion being oriented horizontally;

Figure **3m** shows a top view of the receptacle and dividing partition of Figure **3g** with one quarter of the partition in a planar horizontal position, and the remainder in vertical orientation inside the receptacle;

Figure **3n** shows a top view of the receptacle and dividing partition of Figure **3g** with one quarter of the partition in a substantially planar, side offset mid-height position inside the receptacle;

Figure **4a** shows a top view of a lid structural member and thermal storage element subassembly of the container assembly of Figure **1a**;

Figure **4b** shows a view from above of the lid structural member of Figure **4a**;

Figure **4c** shows a scab cross-section of Figure **4a** on section '**4c-4c**';

Figure **4d** shows an alternate cross-section to that of Figure **4c**;

Figure **4e** shows an alternate cross-section of a sealing portion for the cross-section of Figure **4c** or Figure **4d**;

Figure **4f** shows an alternate installation of thermal storage member in the receptacle of the container assembly of Figure **1a**;

Figure **4g** shows an alternate installation of thermal storage members in a lid structural member similar to Figure **4a**;

Figure **5a** is a diagonal perspective view from one corner of a thermal storage element as shown in Figure **4a**;

Figure **5b** is an opposite diagonal perspective view of the thermal storage member of Figure **5a**;

Figure **5c** is a top view of the thermal storage member of Figure **5a**;

Figure **5d** is a bottom view of the thermal storage member of Figure **5a**;

Figure **5e** is a filler end view of the thermal storage element of Figure **5a**;

Figure **5f** is an opposite end view to that of Figure **5e**;

Figure **6a** is a view of an alternate foam lid construction for the container assembly of Figure **1a**;

Figure **6b** is a top view of an alternate receptacle structure to that of Figure **3a**.

Figure **7a** shows a perspective view from above, in front, and to one corner of an alternate embodiment of container assembly to that of Figure **1a**;

Figure **7b** shows a perspective view of the container assembly of Figure **7a** taken from the opposite upper diagonal prospect;

Figure **7c** shows a perspective view from the front right corner, and above, of the container assembly of Figure **7a** in an open condition;

Figure **7d** shows a top view of the container assembly of Figure **7a**;

Figure **7e** shows a front view of the container assembly of Figure **7a**;

Figure **7f** shows a left hand side view of the container assembly of Figure **7a**;

Figure **7g** shows a right hand side view of the container of Figure **7a**;

Figure **7h** shows a rear view of the container assembly of Figure **7a**;

Figure **7i** shows a bottom view of the container of Figure **7a**;

Figure **8a** is a top view of the container assembly of Figure **7a** in an open position;

Figure **8b** is similar to Figure **8a**, but with an internal divider member removed;

Figure **8c** is similar to Figure **8a**, but with an internal receptacle removed;

Figure **8d** is a perspective view of the internal receptacle of Figure **8c**;

Figure **8e** is a top view of the receptacle of Figure **8d**;

Figure **8f** is a side view of the receptacle of Figure **8d**;

Figure **8g** is an end view of the receptacle of Figure **8d**;

Figure **8h** is a bottom view of the receptacle of Figure **8d**;

Figure **9a** shows a perspective view from above, in front, and to one corner of a further alternate embodiment of container assembly to that of Figure **1a**;

Figure **9b** is a perspective view from above, in front, and to one corner of the container assembly of Figure **9a** in an open position;

Figure **9c** shows a front view of the container assembly of Figure **9a**;

Figure **9d** shows a left hand side view of the container assembly of Figure **9a**;

Figure **9e** shows a right hand side view of the container of Figure **9a**;

Figure **9f** shows a rear view of the container assembly of Figure **9a**;

Figure **9g** shows a bottom view of the container of Figure **9a**;

Figure **9h** is a side view of the container assembly of Figure **9a** in an open position;

Figure **9i** is a scab cross-section of a sidewall portion of the container assembly of Figure **9a**;

Figure **9j** is a cross-section of a lid portion of the container assembly of Figure **9a**;

DETAILED DESCRIPTION OF THE INVENTION

The description that follows, and the embodiments described therein, are provided by way of illustration of an example, or examples of particular embodiments of the principles of the present invention. These examples are provided for the purposes of explanation, and not of limitation, of those principles and of the invention. In the description, like parts are marked throughout the specification and the drawings with the same respective reference numerals. The drawings are not necessarily to scale and in

some instances proportions may have been exaggerated in order to more clearly depict certain features of the invention.

In the description and drawings herein, reference may be made to a cartesian co-ordinate system in which the vertical direction, or z-axis, extends in an up and down orientation from bottom to top. The x-axis extends in the shorter dimension of the container assembly, when fully expanded, running in the front-to-back direction. The y-axis extends cross-wise horizontally relative to the x-axis, running in the side-to-side direction. Unless noted otherwise, the terms "inside" and "outside", "inwardly" and "outwardly", refer to location or orientation relative to the enclosed spaces of the first and second portions of the container assembly, as may be.

Referring to Figures **1a** and **lb**, and by way of a general overview, a container assembly is indicated generally as **20**. Container assembly **20** has a first, or main portion **22**, that may include an optional auxiliary portion **24** mounted on the forward face thereof. Main portion **22** includes an outer casing **26** in the nature of a soft-sided, insulated wall structure **28**, and a reinforcement member, or stiff wall structure, in the nature of a relatively rigid, resilient, molded plastic tub, indicated as receptacle **30**, mounted within soft-sided insulated wall structure **28**. Receptacle **30** is watertight, and is removable from within wall structure **28**, and of container assembly **20** more generally, to facilitate washing thereof. When receptacle **30** is in place, container portion **22** is intended to be maintained in the shape shown in the Figures, and is not intended to be collapsible.

A second portion of container assembly **20** is indicated as a top panel, or lid **32**, that has an internal structural member **34** for engagement with the upper portion of receptacle **30**, thereby acting as a closure member to control access to the enclosed chamber **50** defined within receptacle **30**. Internal structural member **34** has a peripherally extending seal member **210** for interferingly engaging the mouth of receptacle **30**. Lid **32** as such may tend to deter the egress of materials, such as liquids, that might otherwise occur when container assembly **20** is inadvertently tipped over or jostled excessively energetically. Internal structural member **34** also has a recess defined therein for receiving a removable and re-usable thermal storage member **40**, such as may be employed to influence the environmental condition inside chamber **50,** or alternatively, may be remove and employed as a chilled (or warmed) element upon which to rest foods, such as, for example, appetizers, or beverages. Lid **32** may also include

such features as may permit lid **32** to provide a relatively stiff surface upon which to place objects, such as, for example, foods or beverages.

These assemblies of container assembly **20**, are illustrated co-operatively in Figures **1a** and **1b.** They will now be described in greater detail.

First Portion 22

First insulated container portion **22** has an outer casing **26**, an insert, namely receptacle **30**, and a divider or partition **46**. Outer casing **26** has a compartment **48** for receiving receptacle **30**, and receptacle **30** has a chamber **50** which may be divided by placement of partition **46** therein. Partition **46** may be used to separate items placed within chamber **50**. Items may also be retained by partition **46**, as described in detail below. A closure member such as lid **32**, attached to outer casing **26**, may be used to enclose receptacle **30** within compartment **48**. Figure **1a** shows container assembly **20** with lid **32** in a closed position. An optional carrying means such as strap **54** may be attached to outer casing **26** to facilitate transport of container assembly **20**.

Outer Casing 26

Outer casing **26** is preferably made of an insulative material for thermally insulating receptacle **30**. The insulative material inhibits heat transfer between chamber **50** and the surroundings of container assembly **20**. This may tend to help to maintain a preferred temperature of items such as food products stored within receptacle **30**. For example, if items such as bottles of liquid **58**, which are stored within chamber **50**, have a lower temperature than the container assembly's surroundings, then the insulative material may reduce the rate of heat transfer to bottles of liquid **58**, keeping the soft drink or wine at a low temperature for a longer period than if it were not placed within container assembly **20**. When lid **32** is in a closed position, heat transfer may be inhibited to a greater extent.

The insulative material may additionally be soft, such as a resilient foam, so that the container may tend not to damage, or be damaged by, objects with which it may come into contact. If a suitable plastic or other material or stain resistant surface coating or surface treatment is used, then outer casing **26** may also be readily cleaned to remove dirt and other debris acquired through use.

Outer casing **26** preferably has an insulated bottom panel **60**, and insulated wall panels, namely a front panel **62**, a rear panel **64**, and a pair of right and left hand side panels **66** and **68**. In the description of the embodiments of the claimed invention, the choice of front and rear, left and right, orientations is arbitrary. Each panel **60**, **62**, **64**, **66** and **68** is preferably located at substantially right angles to two adjacent wall panels. For example, panel **64** is located adjacent panel **66** at one end, and adjacent panel **68** at an opposite end. The bottom panel may be attached to all four panels **62**, **64**, **66** and **68**, along edges thereof. The combination of panels **62**, **64**, **66** and **68**, and bottom panel **60**, define compartment **48**. Bottom panel **60** and panels **62**, **64**, **66** and **68**, each are preferably rectangular, with respective opposite panels **62** and **64**, and **66** and **68**, being congruent to one another. In this preferred configuration, compartment **48** has a generally cube-like or rectangular parallelepiped shape. Panels **62**, **64**, **66** and **68**, and bottom panel **60** may be fastened to one another by sewing, gluing or some other suitable fastening means. Alternatively, two or more panels (including the bottom panel) may be formed from a single piece of material having one or more folds therein to define the two or more panels. In the preferred embodiment, the front, bottom and rear panels may be made from a single piece of insulated material. Lid **32** and an adjacent wall may also be formed from a single piece of material. For example, rear panel **64** and lid **32** may be formed from a single piece of material having a fold therein to define rear panel **64** and lid **32**. It may be noted that lid **32** may thusly be connected to the upper margin of rear panel **64** by a flexible fabric hinge.

In an alternative embodiment, outer casing **26** may have either less than four, or more than four, panels (not shown). For example, outer casing **26** may be configured to have one continuous panel defining a round wall, thereby forming a right cylinder, or some other generally rounded shape.

In the preferred embodiment, connected panels **62**, **64**, **66** and **68** each have an upper , or distal, edge **72**, **74**, **76** and **78**, respectively, which in the case of edges **72**, **76** and **78** is also a free edge, and edge **74** being a fabric hinge, the four edges co-operating to define container opening **80** through which receptacle **30** may be placed into compartment **48**. Lid **32** is hingedly, or pivotally attached to rear panel edge **74**. Rather than employing a zipper (or, optionally, in addition to a zipper, if a zipper is desired), internal structural member **34** engages the mouth of receptacle **30** in a relatively tight interference fit, thus effectively securing lid **32** to inhibit heat transfer to and from

chamber **50**. A strap, or flexible handle **82** is grasped to release the mating portions of a hook and eye fabric strip securement **84** (e.g., Velcro, t.m.) mounted to handle **82** and front panel **62** respectively, and to permit the interference fit seal of lid **32** inside receptacle **30** to be broken, and lid **32** moved pivotally about its rearward hinged edge between the closed, or sealed position, and an open, and unsealed, position.

Outer casing **26** may have shoulder strap **54** attached thereto, for example, at side panels **66** and **68**. As noted above, outer casing **26** may also have an auxiliary portion or pouch **24**. Pouch **24** may have a see-through mesh pocket **86**, such as may be convenient for viewing the contents thereof, which may include knives, forks, spoons or other objects.

Figure **2g** shows the general structure of a cross-section of any of the insulated wall panels, such as left hand side wall panel **68** with receptacle **30** and partition **46** in place. A scab section of bottom panel **60** is also shown to reveal its layers of construction, as is a scab section of thermal storage member **40**. With the exception of auxiliary pouch **24**, this section is typical not only of front panel **62** but also, generally, of rear panel **64**, side panels **66** and **68**, bottom panel **60**. The outer facing layer of the panel (be it **62**, **64**, **66** or **68**) is an outer skin in the nature of a canvas covering layer **88** for resisting abrasion. It overlays an intermediate thermal insulation medium, such as may be in the nature of closed cell foam insulation layer **92** for impeding, which is to say discouraging, heat transfer between the interior of container assembly **20** and external ambient. The inner face of insulation layer **92** is covered by an inner skin in the nature of a flexible sheet **90**, whether of vinyl (t.m.) or of plasticised metallic foil sheeting that is shiny and reflective. The metallic foil sheeting material may be the type sold under the name Therma-Flect (t.m.). The inside of compartment **48** is lined with white vinyl sheeting on its forward and bottom sides.

This same general structural arrangement prevails in bottom panel **60**, although outer covering layer **96** may be a rather thicker, scuff-resistant material than the outer skin of the upwardly extending side walls.

Notably, in the example illustrated in Figure **2g**, the bottle of liquid **58** rests upon thermal storage element **40**, which, in this view being shown in one of its alternate positions, is seated, resting on the bottom of receptacle **30**. The weight in receptacle **30** is then carried into bottom panel **60**, and heat transfer from thermal storage element **40** is

preferably biased (i.e., generally made easier by direct contact with item **40**, rather than harder) toward the objects within receptacle **30**, and generally impeded or resisted through panel **60**.

Receptacle 30

As a preliminary matter, Figures **3g** to **3n** are perspective views, not orthogonal views, such that the foreshortening of the taper of the walls appears to be pronounced in an exaggerated, or somewhat disproportionate fashion. A top view, with partition **46** removed, and a bottom view, in Figures **3e** and **3f**, respectively, and a top view of an alternate embodiment, shown in Figure **6b**, provide a contrasting analogous orthogonal view.

Referring to Figures **3a** to **3n**, receptacle **30** is preferably configured to be the same general size and shape as compartment **48** so that receptacle **30** may be placed within compartment **48** and lid **32** may be closed using flexible handle **82** to contain receptacle **30**. While receptacle **30** preferably conforms to compartment **48**, it may have some other configuration that fits within compartment **48**. For example, receptacle **30** may have fewer than four, or greater than four walls. In an alternative embodiment, receptacle **30** may be configured to have one continuous wall defining a round cylindrical segment or another generally rounded shape.

In the preferred embodiment, receptacle **30** has a base or bottom wall indicated as bottom **98**, a receptacle front wall **100**, a rear wall **102**, and a pair of right and left hand side walls **104** and **106**. Each wall **100**, **102**, **104** and **106** is preferably generally located at a generally square corner to two adjacent walls, aside from the slight generally flared taper of the adjacent walls. For example, wall **102** is located adjacent wall **104** at one end of wall **102**, and adjacent wall **106** at an opposite end of wall **102**. Bottom **98** is be attached to all four walls **100**, **102**, **104** and **106**, along edges thereof, the general structure of receptacle **30** being a molded plastic part such as may be used to contain liquids. Walls **100**, **102**, **104** and **106**, and bottom **98**, co-operate to define an interior surface **108** of receptacle **30**, which bounds chamber **50**. Bottom **98** and walls **100**, **102**, **104** and **106**, each are preferably generally rectangular in shape with opposite walls **100** and **102**, and **104** and **106**, being substantially congruent to one another. In this configuration, chamber **50** has a generally cube-like or rectangular parallelepiped shape

having contours, as described in detail below. It should be noted that receptacle **30** may be configured without a bottom **98**.

Walls **100**, **102**, **104** and **106** extend from receptacle bottom **98**, and each wall terminates at free edges **110**, **112**, **114** and **116**, respectively. Free edges **110**, **112**, **114** and **116** together define a receptacle rim, or edge **118** of generally rectangular plan form, with radiused corners. Receptacle edge **118** is preferably generally equidistant from bottom **98** (i.e., lies in a parallel, upwardly spaced plane) and defines a receptacle opening **120** by which to obtain access to chamber **50**. While bottom **98** is generally planar, it may alternatively have portions defining indents (not shown) that conform to the profiles of one or more items to be contained within receptacle **30**. Such indents may inhibit movement of these items when placed within the indents corresponding to their respective profiles.

Receptacle **30** is preferably rigid to provide a degree of protection to items stored therein from external forces caused, for example, by bumping, jostling, or knocking of container assembly **20** when it is transported or otherwise used. At the same time, receptacle **30** may tend to be sufficiently lightweight that it may not make container assembly **20** unduly heavy to carry when container assembly **20** is filled with items such as bottles of liquid **58** or sandwiches. A plastic, for example, may be used to form receptacle **30**. A relatively tough plastic is preferred because it may tend to resist breakage, it can contain melting ice and spilled liquids, and it may be readily cleaned.

Receptacle **30** may be stiffened further by including one or more strengtheners, such as an array of ribs **122**, that extend in a generally upwardly direction from bottom **98**, to increase the rigidity of receptacle **30**. Ribs **122** may be either attached to, or preferably be formed integrally with, receptacle **30**. Each wall **100**, **102**, **104** and **106** preferably has at least one rib **122**, which at least partially traverses an external surface thereof. As shown, for example, in Figures **3a** and **3b**, ribs **122** are generally parallel to one another, and originate adjacent bottom **98**, extending from bottom **98** and ending at a rib terminus **124**. While rib terminus **124** may be located at or adjacent receptacle edge **118**, it is preferably located at some intermediate height between bottom **98** and receptacle edge **118**. While any of 1/4, 1/3, 1/2, 2/3, or 3/4, or some other suitable proportion may be chosen, in the preferred embodiment, terminus **124** is roughly 1/2 way between bottom **98** and rim **118**. In this intermediate position, rib terminus **124** may also

meet interior shoulder **126** which may be used to support partition **46**, as described in further detail below.

The interior surface **108** of receptacle **30** has at least one guide **128** for receiving or engaging a portion of partition **46**, for example, an edge, such as edge **130** (as shown in Figure **3e**; and described in further detail below). Guide **128** may be added to, or, preferably be made integrally with, receptacle **30**. In the preferred embodiment, guide **128** is integrally formed with a wall, such as wall **100** or **102**, of receptacle **30**, and is oriented so that an edge, for example edge **130**, of partition **46** may be placed therein. When partition **46** is held by guide **128**, it is preferably oriented to at least partially divide chamber **50**. Most preferably, the internally facing surfaces of the integrally molded wall feature of rib **122** also function as guide **128**.

Guide **128** may be in the nature of a rebate, groove or fluting, and may be substantially linear to permit partition **46** to be slidingly received therein. Guide **128** may be located to correspond to the location of a rib **122** so that guide **128** is defined within rib **122**. Accordingly, guide **128** originates adjacent bottom **98**, and extends along interior surface **108**, from bottom **98**, and ends at a guide terminus **134**, which may corresponds to rib terminus **124**. Guide terminus **134** may be located at or adjacent receptacle edge **118**, but is preferably located at some mid-point between bottom **98** and receptacle edge **118** adjacent interior shoulder **126**. A longitudinal axis of guide **128** may be substantially perpendicular to a plane of bottom **98.**

Guide **128** need not be the same length as rib **122**; it need only be of sufficient length to receive at least part of an edge (such as edge **130**) of partition **46** to inhibit movement thereof in a direction transverse to a longitudinal axis of guide **128**. Receptacle **30** may alternatively be formed with guide **128** (and, if desired, rib **122**) oriented at an angle other than at 90 degrees relative to bottom **98**. This would in turn alter the orientation of a received partition **46**. If rib **122** and guide **128** are aligned, then rib **122** both strengthens receptacle **30** and defines guide **128**. This arrangement may also facilitate the manufacture of receptacle **30** if, for example, it is made by injection moulding. In the preferred embodiment, guide **128** is configured to be substantially straight for receiving a substantially straight edge **130** of partition **46**.

Receptacle **30** may be provided with additional guides **128** for receiving edge **130** of partition **46**, for example. Two guides **128** may co-operate and each receive an edge of

partition **46**, such as edges **130** and opposite edge **132**, to inhibit movement of partition **46** (as shown in Figure **3g**). The provision of multiple guides **128** within receptacle **30** permits chamber **50** of receptacle **30** to be sub-divided in different ways depending on which guides **128** are used for receiving partition **46** (as further explained below).

Each guide **128** is preferably bounded by generally parallel edges or boundaries, which have a concave rounded or arcuate intermediate portion **136** therebetween. The rounded intermediate portion **136** may facilitate the manufacture, for example by moulding, of receptacle **30**, may increase the stiffness of the structure more generally, and may serve to provide a nesting curvature for a round cylindrical container, such as a bottle or can that may be placed in receptacle **30**.

Receptacle **30** may also have a shoulder **126** for supporting partition **46**, or a portion of partition **46**, in a generally horizontal orientation, such as to function as a shelf or partial shelf. Shoulder **126** extends along interior surface **108**, and is preferably located between receptacle edge **118** and bottom **98**. In the preferred embodiment, shoulder **126** extends along the perimeter of interior surface **108** at a height intermediate to the bottom and the upper rim, preferably generally about halfway between the two. To reduce material in an alternate embodiment, shoulder portions in the nature of inwardly extending flutes of partial height, may instead be implemented to support partition **46**. Shoulder **126** projects from interior surface **108**, and may present a surface **140**, that is generally planar and parallel to bottom **98**. Subject to the existence of intermediate arcuate portions **136**, surface **140** may have a generally uniform width, and may have gaps **142** therein where guides **128** intersect shoulder **126**. Each gap **142** corresponds to a guide terminus **134**.

In the preferred embodiment, receptacle **30** has six generally parallel guides **128**: three sets of opposed guides located in opposed walls **100** and **102**, respectively. In an alternate embodiment it may also have two sets of opposed guides in opposed walls **104** and **106**. Each guide **128** may be spaced on generally equal, regular pitches along walls **100**, **102**, **104** or **106**.

As noted above, wall portions between adjacent guides **128** may be configured to accommodate items that may be typically stored within receptacle **30**, such as beverage bottles **58**. For example, a wall portion **136**, located between two guides **128**, may be generally arcuate, or some other shape, so that it conforms to a profile of a bottle **58**.

Similarly, a corner wall portion **144** may conform to a profile of bottle **58** and define a corner of receptacle **30**. An axis of the apex of each wall portion is preferably substantially parallel to guides **128**, and each guide and its adjacent arcuate portions have substantially linear co-terminating boundaries **146**. While in one embodiment the width of shoulder surface **140** may be roughly uniform, it may vary to correspond to the profile of the wall portions, such as corner wall portion **144**.

In the alternate, preferred embodiment of Figure **6b**, a receptacle **138** is shown that does not have arcuate wall portions, or arcuate corner molding portions, but rather substantially planar walls, with corner radii, giving a smoother, and simpler, style of construction.

If receptacle **30** is configured to be substantially the same size as compartment **48**, (or, that is of a corresponding size that fits well therein) then spaces or gaps **94** between receptacle **30** and one or more of walls **62**, **64**, **66** and **68**, may be reduced. A smaller gap **94** may reduce the likelihood that spilled liquids, food, or such other matter may find its way between the inwardly facing wall surfaces of soft sided wall structure **28** and the outwardly facing surfaces of receptacle **30**, which may tend to reduce the frequency with which compartment **48** requires cleaning. Gap **94** may be reduced by configuring receptacle edge **118** to have a reinforcement or stiffener in the nature of a flange or lip **148**. Lip **148** may extend peripherally along receptacle edges **110**, **112**, **114**, **116** and is preferably located adjacent one or more of outer casing free edges **72**, **74**, **76** and **78** when receptacle **30** is positioned within outer casing **26**. This proximity of lip **148** to free edges **72**, **74**, **76** and **78**, may tend to reduce the size of a gap **94** that may form between the flexible outer casing **26** and receptacle **30**. By reducing the size of gap **94**, matter such as a spilled liquid may be encouraged either to be caught within receptacle **30** or repelled by any portion of the exterior surface of outer casing **26**. Lip **148** may have a generally L-shaped cross-section forming a step in receptacle edge **110**, **112**, **114** or **116** as may be, and may project outwardly and away from walls **100**, **102**, **104**, **106**, and chamber **50** in a generally horizontal plane. Lip **148** may alternatively or additionally be arcuate, rounded or have some other shape that projects from walls **100**, **102**, **104**, **106** to discourage the passage of matter between outer casing **26** and receptacle **30**. (Figure **2g**).

Partition 46

Referring to Figure **8a**, partition **46** may be positioned or located within receptacle **30** to sub-divide chamber **50** in at least two different ways, as shown, for example in Figures **3g** to **3n**. By sub-dividing chamber **50**, the movement of items stored within chamber **50** may be inhibited, which may limit the extent to which they come into damaging contact with one another, and with walls **100**, **102**, **104**, **106** and bottom **98**, when container assembly **20** is transported or moved. Partition **46** may be made of a substantially rigid material so that it may tend to resist deformation when contacted by items stored in receptacle **30**. As discussed in further detail below, one or more guides **128**, and shoulder **126**, or both, may co-operate with partition **46** to inhibit its movement within receptacle **30** when it is located to sub-divide chamber **50**.

Positioning and configuring of partition **46** may be facilitated by providing partition **46** with a first hinged connection **150** therein. Hinged connection **150** separates partition **46** into at least a first partition portion **152** and a second partition portion **154**. First and second portions **152** and **154** are joined to one another along hinged connection **150**, and are movable relative to one another about hinge **150**.

A portion of partition **46**, which traverses partition **46** between first and second portions **152** and **154**, preferably defines a living plastic hinge **156**. Hinge **156** preferably has a thickness which is less than the thickness of the web of at least one of the first and second portions **152** and **154**, and the peripheral flange, or edge **158**, standing perpendicular to the general plane of the intermediate, transversely extending webs, is relieved, (by being chamfered, or bevelled down) in the region of the hinge. If partition **46** is moulded from a plastic then hinge **156** may be integrally formed therein.

Hinge **156** may alternatively be formed using a flexible joining member such as an adhesive tape attached to both first and second partition portions **152** and **154** (not shown). Alternatively, hinge **156** may be formed by laterally inserting a pivot member such as a pin through one or more projections extending from each of first and second partition portions **152** and **154**, respectively. First and second partition portions **152** and **154** may then rotate about the pin connecting them.

In the preferred embodiment, first and second partition portions **152** and **154** may be generally planar, and may be connected or mounted along adjacent edges thereof. In

this configuration, the angular displacement of first and second portions **152** and **154** relative to one another about hinge **156** may be varied. For example, partition **46** may be configured to be generally planar when first and second portions **152** and **154** are co-planar (see Figure **3i**), and may be configured to be generally L-shaped when first and second portions **152** and **154** are generally at right angles relative to each other (see Figure **3n**).

In the preferred embodiment, partition **46** has third partition portion **160** attached to second partition portion **154**, and fourth partition portion **162** attached to third partition portion **160** as shown in Figure **3h**. Portions **160** and **162** may be attached using second and third hinges **164**, **166** which may be configured in a manner similar to hinge **156**, as described above. Hinges **156**, **164** and **166** are preferably parallel to one another, permitting multi-position partition **46** to be placed in a variety of different configurations: generally planar when portions **152**, **154** and **160** and **162** are co-planar (see Figure **3h**); generally L-shaped (Figure **3g**) when one or two of portions **152** or **154**, **160** or **162** is (or are) rotated about one of the hinges (**156**, **164** or **166**) to be generally perpendicular to the remaining two portions (see Figures **3g**, **3i**, **3j**, **3l**, and **3n**); and generally U-shaped when portions **152** and **162** are rotated towards each other about hinges **156** and **166**, respectively, until they are generally perpendicular to intermediate portion **154** and **160**. (See Figures **3k** and **3m**). A great number of permutations are possible, and may be employed according to the needs of the user.

Referring to Figure **3h**, when in a generally horizontal planar orientation, the plan form of partition **46** is preferably congruent to a shape defined by an intersection of support surface **140** and receptacle interior surface **108**. That is, the periphery of the divider is generally similar in plan form to the plan form of the shelf defined by the shoulder at the transition of section of the wall structure of receptacle **30**. This permits partition **46** to lie within receptacle **30** and to be supported about its margin by shoulder **126**. In this configuration, partition **46** divides chamber **50** into a first sub-chamber **168** adjacent bottom **98**, and a second sub-chamber **170** adjacent opening **120** (best seen in Figure **2g**). Items stored within each sub-chamber **168** and **170** may be kept separate by first placing one or more items into sub-chamber **168**, placing partition **46** onto shoulder **126**, and then placing one or more additional items onto partition **46** for storage within sub-chamber **170**. Alternatively, or additionally, a thermal storage element, such as a hot pack or an ice pack, or such as discussed more fully below, can also be located upon partition **46** amidst the objects contained in container assembly **20**.

Access to items in sub-chamber **168** may be obtained by moving, e.g., pivoting or lifting, one or more of panels **152**, **154**, **160** and **162** away from sub-chamber **168**. To move panels of partition **46**, partition **46** may be grasped through one or more holes therein, as described below.

Referring to Figures **3g** to **3n**, partition **46** may also be configured to partially sub-divide chamber **50** when partition **46** has a general L-shape. In this configuration, the peripheral edges of one portion, for example portion **152**, may be placed in, or slidingly engaged with, a pair of opposed guides **128**. The remaining portions **154**, **160** and **162**, lying perpendicular to portion **152**, may be supported by shoulder **126**. Items stored between partition **46** and bottom **98** may be separated from items placed onto portions **154**, **160** and **162**. Items may additionally be placed on a portion of bottom **98** that is exposed even when partition **46** is in place. If the distance between partition portions **154**, **160** and **162** and bottom **98** is substantially the same as the width of portion **152**, then items placed on bottom portion **162** may be separated by portion **152** from items placed on the portion of bottom **98** that is enclosed by partition **46**. In the preferred embodiment, portions **152**, **154**, **160** and **162** all have substantially the same width, and shoulder **126** is displaced from bottom **98** by a distance that may be roughly equal to two times the width of one of these portions. Although it is preferred that they be roughly equal quarters, it should be noted that portions **152**, **154**, **160** and **162** may have substantially different widths. The distance between bottom **98** and shoulder **126** may vary between embodiments. For example, a greater distance may be used when constructing a receptacle **30** for containing wine bottles than when constructing a receptacle **30** for containing beer bottles.

Edges of portion **160**, **162** and portion **154**, may be inserted into respective opposed guides. Once so inserted, portion **152** may be pivoted about hinge **156** to be supported by shoulder **126**, and to provide an alternate division of chamber **50**. In this configuration, the distal end **168** of portion **162** is located adjacent bottom **98**. Many alternate positions are possible as illustrated in the Figures. These different configurations of partition **46** may permit items of various dimensions to be stored within receptacle **30**. If a different configuration of partition **46** is required, partition **46** may be manually removed, reconfigured and repositioned, as needed.

As noted above, partition **46** may preferably have a stiffener in the nature of a rim or flange **158**. Flange **158** preferably extends about at least a portion of the periphery of partition **46**. Flange **158** may project generally perpendicularly to the transverse web **172** of partition **46**, to form either an L-section (an angle) or as a T-section. A T-section is preferred as shown in Figure **2l**. Flange **158** is preferably relieved adjacent all hinges.

Partition **46** may additionally have a bore, formed opening, or aperture, or apertures, such as may be in the nature of a circular holes **176**, passing through at least one of portions **152**, **154**, **160**, and **162**. Holes **176** may permit partition **46** to be grasped for removal or relocation.

Referring to Figure **2g**, hole **176** may additionally be sized to receive an item such as a vessel, for example the neck of bottle **58**, that is placed within chamber **50**. Hole **176** is preferably of the order of 1 – ½ to 2 inches in diameter, preferably about 1 – ¾ inches to accommodate the neck of a wine bottle, or pop-bottle or beer bottle, and so on, while being smaller than a cross-sectional dimension of the body of the bottle. Because hole **176** is preferably at least the same size as the bottle neck cross-sectional dimension, lateral movement of the bottle neck within hole may be inhibited, for example, when container assembly **20** is carried, jostled or bumped. By inhibiting movement of the bottle neck, bottle **58** may be discouraged from toppling and spilling its contents, or coming into undesired contact with other items stored within receptacle **30**. An array of holes **176** may be located in a partition portion, such as portion **152** or **162**, to position a bottle body adjacent one of the wall portions, when bottle **58** is supported by bottom **98**, portion **152** is supported by support surface **140**, and the bottle neck extends through hole **176**.

While the preferred embodiment of the invention has three holes **176** located in each of the end quarter panel portions of partition portion **152**, **162**, one, two, or more holes may be placed in any portion, as in the alternative configurations of partitions **180** and **182** in Figures **2h** and **2i**. Partition **180** is a double fold, three portion partition (the portions being roughly equal in longitudinal extent) with two holes **176** in one of the end portions (see Figure **2h**). Partition **182** is a double fold, three portion partition, in which one portion is substantially larger and three holes **176** is in one of the end portions (see Figure **2i**).

Internal Structural Member **34**

Lid **32** preferably includes internal structural member **34**. The general cross-sectional structure of lid **32** may be generally as shown in Figure **4c**, in which lid **32** has an outer skin **184**, an intermediate layer of thermal insulating material **186**, such as may preferably be a layer of closed cell foam, and an inner wall, or skin, provided by internal structural member **34**. A heavy fabric strip **188** is folded over the combined edges of the fabric outer skin **184** and the external lip **190** of structure member **34** and the laminate so formed is then sewn together, the stitches passing through lip **190**. In this way a thermally insulative sandwich structure is formed.

In the preferred embodiment, internal structural member **34** includes a substantially planar medial web portion, **192**, that is generally rectangular in plan view (reflecting the generally rectangular plan form of container **20**, more generally). An integrally formed bezel, or surround member **194** extends peripherally, and continuously, about web portion **192**, much in the manner of a picture frame, or peripheral flange. Surround member **194** is generally rectangular in plan view, and interacts with the similarly rectangular plan view outline of the mouth of receptacle **30**. If receptacle **30** were circular, or elliptical, or oblong, surround member **194** would also tend to be correspondingly circular, or elliptical, or oblong to permit satisfactory mating engagement, as described below. The peripherally outermost portion, or extremity, of surround member **194**, is peripheral lip **190**. Lip **190** lies in the plane of web portion **192** (although it need not do). Inwardly of lip **190** is an upstanding (in the view of Figure **4c**), outwardly facing wall member **196**. Wall member **196** terminates at an end wall portion **198** that extends in a plane generally parallel to the plane of web portion **192** (although end wall portion **198** could be a continuously radiused portion, or could be bevelled, as may be).

Lying peripherally inwardly spaced from outwardly facing wall member **196**, is a generally inwardly facing wall member **200**, that extends between the peripheral margin of web portion **192** and the inward margin of end wall portion **198**. Inwardly facing wall member **200** has a number of sockets, or female engagement fittings **202** in the nature of round holes **204** formed therein for receiving protruding male engagement fittings **206** of thermal storage member **40**. Two such female engagement fittings **202** are located in each of the side portions **208** of inwardly facing wall portion **200** to provide generally opposed engagement points for releasable retention of thermal storage member **40** in a

nested position snug against lid **32** as indicated in Figure **4c**. It is preferred that holes **204** be blind, or capped to form sealed sockets.

Outwardly facing wall member **196** includes a seal member, or sealing fitting, **210**, in the nature of an externally oriented bead **212** of marginally greater peripheral dimension then the land region **214** of an opposing wall of receptacle **30** at the mouth thereof with which bead **212** engages in an interference fit when lid **32** is moved to a closed position relative to chamber **50**. As such, bead **212** provides a sealing means for discouraging leakage from receptacle **30** in the event of mishandling. That is, bead **212** engages the distal portion, or bead engaging land region **214** of a peripheral wall of receptacle **30** in an interference fit. The general structure of surround member **194** is somewhat resilient, and, by being formed in the bent shape illustrated, is somewhat like a spring when deflected, thus providing biasing against the tendency of bead **212** to be deflected by the rim, or flange, **118**, of receptacle **30** when engaged in an interference fit. This may tend to provide a reasonable tendency to maintain a seal, without being unduly resistive to the opening of lid **32**.

As noted above, lid **32** has a handle, or draw, or release member, namely handle **82**, that is attached externally to lid **32**, and that has a hook and eye fastening member (e.g., Velcro, t.m.) mounted on the inside of the tip thereof for engaging a mating hook-and-eye securement fitting **84** mounted to the forward facing region of front panel **62** below the upper margin thereof. When secured, the release member **82** may tend to secure, or lock lid **32** in place. When lifted, the release member **82** may tend to aid in disengaging lid **32** from receptacle **30**.

It may be noted that bead **212** is formed by having a cross section or a continuously radiused outer quarter round **216**, that terminates at the straight portion **218** of outwardly facing wall portion **196** at a jog, or dog-leg **220**. An alternative style of seal member is shown in Figure **4e**, where the straight portion **222** of an outwardly facing peripheral wall member **224** has an outwardly protruding, half round bead **226** of smaller radius than quarter round **216**, inset a distance δ from end wall **228**. Once again, introduction of the surround member into the mouth of receptacle **30** will tend to cause bead **226** to be squeezed, thus tending to make a seal.

Further, where no internal thermal storage medium space is provided in lid **32**, a different surround member **230** may be used as shown in Figure **4d**. In this instance,

surround member **230** has an inclined inwardly facing wall member **232**, in place of the straight wall, **200**. In this example, as well, lid **32** is not provided with a thermally insulative layer such as insulating material **186**, but rather, merely has an external fabric layer **234**. That is, lid **32** may be insulated as in Figure **4c**, or uninsulated as in Figure **4d**. Lid **32** may have a surround member as in Figure **4c**, and no insulation, or, alternatively, lid **32** may have a surround member as in Figure **4d** with insulation.

In use, advancement of internal structural member **34** toward receptacle **30**, as by pivoting motion about the fabric hinge joining lid **32** to rear panel **64**, may tend to cause the progressive introduction of internal structural member **34**, and most particularly, of peripherally extending seal fitting **210**, into an interference fit engagement with the land region, **214**, of the mouth of receptacle **30**, just inside lip **118**. As lid **32** is pushed further, more of seal fitting **210** engages land region **214**, until there is, ideally, contact about the entire periphery of land region **214** and the entire periphery of internal structural member **34** at the contact interface of seal fitting **210** with land region **214**.

When this occurs, bead **212** may tend to want to compress, and in so doing, a hoop stress may be generated in each of land region **214** and the outer wall **196** of internal structural member. This hoop stress, or peripheral, or circumferential stress, may tend to be a tensile stress in land region **214**, and a compressive stress in outer wall **196**, running in the peripheral direction. In an alternate embodiment, receptacle **30** may have a lip that engages a structural member of an alternate lid, otherwise generally similar to lid **32**, on an inside, or inwardly facing peripherally extending wall, such that the land region of the receptacle would be in peripheral compression, and the engaging region of the lid would be in peripheral tension. It may also be noted that the surround portion of internal structural member **34** is, in effect, a short cantilevered beam extending perpendicularly to the plane of web **192** of lid **32** generally. Lateral external compression of bead **212** may tend to generate a resistive restoring moment couple in outer wall **196** (in tension in a direction perpendicular to web **192**), and in corresponding compression in inner wall **200**.

As may be noted, the interface of seal fitting **210** with land region **214** is intended to be sufficiently tight that it may tend to resist re-opening. To that extent, the interface between lid **32** and the lower portion **22** of container assembly **20** may tend not to require a zipper, and may be zipperless, that is, free of any peripheral tracked fastener.

Thermal Storage Element **40**

Thermal storage element **40** is shown in Figures **5a** to **5f**. Thermal storage element has a first, generally planar main side **240**, and an opposed, spaced apart, generally parallel opposite main side **242**. The margins of sides **240** and **242** are peripherally joined by side edge walls **244**, **246**, and end walls **248** and **250**, these elements co-operating to form a hollow container having a space **236** therein for containing a thermal storage medium **238**. In the preferred embodiment, this thermal storage medium **238** is water, whether hot, cooled, or frozen.

End wall **248** is a "filler end" wall, having a rebate, or relief in the nature of a cusp **252** of constant circular arcuate shape formed inwardly therein, and a threaded spout **254** moulded centrally in cusp **252**, with a removable matingly engageable threaded cap **256** mounted on the spout. A user is thus able to fill thermal storage element **40** with water (or, indeed, with any other suitable thermal storage medium), to put thermal storage element in the freezer to freeze (or, alternatively, to put hot water, or other suitable heated thermal storage medium therein), and then, with cap **256** securely in place, to put thermal storage element in container assembly **20**. A similar cusp **258** is formed in end wall **250** directly opposite cusp **252**, and provides a ready hand engagement point, or hand hold, or grip, for disengaging thermal storage element **40** from internal structural member **34**. As noted above, end walls **248** and **250** also have externally protruding nubbinses, or blisters, detects or stubs in the nature of male retention fittings **206** for engaging the corresponding female retention, or engagement fitting **202** of surround member **194**. It will be understood that the male fittings could be formed on the surround, and the female fittings could be formed on the thermal storage element. As the fit between the male and female engagement fittings is an interference fit, the adjacent portion of the inwardly facing surround wall must be deflected (and against its biasing force), such that the fittings **206** and **202** may tend to snap in place when matingly seated. Removal is by reaching into cusp **258**, and disengaging thermal storage element **40**.

The obverse face (that is of opposite main side **240**) of thermal storage member **40** has a pair of recesses, or depressions **260** and **262** formed therein, the depression have a waist **264** and arcuate end portions **266**. Arcuate portions **266** are generally circular arcs, and have a diameter suited to accommodating the bottom of a beverage container, such as a bottle or a drink can. Thermal storage member **40** can act as a seat for drinks either when lid **32** is open, and supported in a generally flat position, or when thermal

storage member is supported in some other relatively flat orientation, such as when mounted on the bottom of receptacle **30** or when seated on partition **46** in a generally horizontal shelf configuration. Alternatively, and quite conveniently, thermal storage member **40** can be removed from container assembly **20**, and set on a flat surface, such as a table, and drinks placed on it, or, if laid on the other side (with recesses **260** and **262** facing downward) with appetisers or other foods kept warm or cool on top of member **40** as may be suitable.

It is not necessary that container assembly **20** employ thermal storage element **40** in the lid only. On the contrary, thermal storage element **40** may be placed upon partition **46**, or upon the bottom of receptacle **30**, as may suit the user. Furthermore, it is not necessary that container assembly **20** be provided with only one thermal storage member **40**, but could be provided with two, or three or several, whether supplied with container assembly **20** as part of the kit, or as an additional accessory made separately available at the point of sale.

An alternate thermal storage member arrangement is shown in Figure **4g**, in which an internal structural member **270** for placement in a lid structure, such as lid **32**, and otherwise similar to member **34**, has female engagement fittings **272** along the long edges **274** of its rectangular, inwardly facing wall portion **276**. In this instance two thermal storage members **278**, **280** are provided in a snap fit, side-by-side configuration. Thermal storage members **278, 280** are substantially the same as thermal storage member **40** in terms of construction, and the shape and size of recesses **282**, threaded filler spouts **284** and caps **286**, however with male engagement fittings **288** being mounted transversely as compared to thermal storage element **40**. The principle difference is that members **278, 280** are "half size" versions of storage member **40**. The use of two thermal storage members permits one, or both, to be used in the lid; one in the lid and one in the bottom of receptacle **30**, both in the bottom of receptacle **30**, or one or another on a shelf formed by partition member **46**. It may thus tend to offer greater flexibility of variable configurations. As with thermal storage element **40**, more than two thermal storage elements could be provided.

Auxiliary Wall Structure **24**

Auxiliary wall structure **24** includes an outwardly and upwardly extending flap **294**, a side wall **296**, and a tracked closure member in the nature of a zipper **298** operable to

control access to the interior of the space **300** defined between flap **294** and side panel wall **296**. Flap **294** has an arcuate, padded lower portion **302** having a first margin attached to front panel **62**, near the juncture of front panel **62** with bottom panel **60**. Padded lower portion **302** extends upwardly and outwardly from that edge to an arcuate lateral seam **304**. A padded, generally planar (when not pulled open) upper portion **306** extends upward from the upper margin of lower portion **302**. Upper portion **306** has an external mesh pocket mounted thereto. Side wall **296** is formed in a U-shape, having depending lower portions **308** that are mated to lower portion **302**, upwardly extending side portions **310, 312**, and a curved central portion **314** extending therebetween, the inner margins of items **310, 312** and **314** being sewn to the front face of front panel **62** of first insulated container portion **22**, and the outer margins having one half of a tracked closure member, in the nature of zipper **298** mounted thereto, for co-operation with the other half of zipper **298** that is mounted to the upper margin of flap **294** , to whose shape the outer margins of items **310, 312, 314** conform. Upper curved central portion **314** has an eyelet **318**, of two overlapping flaps to admit an electronic jack, or plug **320**, of a head set such as may be plugged into an entertainment unit, which may be a music playing device, such as device **322**, which may be a CD player, a cassette player, a portable radio, or, as in the preferred embodiment, an entertainment unit combining all three capabilities. An internal pouch **324** having an elasticised upper lip **326** is provided for receiving the entertainment unit, and such cassettes or compact discs as may be desired by the user. Alternatively, item **324** may have an internal space **330** suitable for accommodating knives, forks, spoons, napkins, and other items such as may be desired for a picnic. Internal gussets **332** extend between the lateral margins of pouch **324** and the opposed margins of front flap **294** acting to limit the extent to which flap **294** can be opened, and thereby discouraging it from opening to such an extent that objects contained therin may too easily fall out. The termination points of zipper **298** extend to a lower height than the upper margins of gussets **332**. A generally triangular lifting lug is mounted to front panel **62** adjacent to eyelet **318**. While item **324** is not thermally insulated, flap **294** is fabricated with an internal layer of rubberized padding that is intended to provide a measure of protection against rough handling to such electronic equipment or other objects as may be carried therein.

Alternate Lid Surface

Lid **32** may have the structure shown in Figures **4c** or **4d**, or some combination thereof, or, alternatively, may have the structure of alternate lid **334** shown in Figure **6a**. In this instance, rather than using a relatively low density closed cell foam, as in Figure **4c**, a

relatively high density, relatively stiff molded foam is used to yield a generally rectangular table top portion **336** in the nature of a recess **338**, having a quadrilateral four sided (preferably square or rectangular) peripheral containment wall **340** such as may tend to discourage objects from sliding away, even if lid **334** is not precisely level, or if container assembly **20** is bumped or jostled, or carried in an automobile. Lid **334** also has a pair of circular recesses, or depressions **342**, having annular sidewalls that may, again, tend to serve to steady a beverage placed thereon. Such a lid as **334** may provide a convenient containment surface for foods and beverages at a lunch stop or picnic. In a preferred embodiment, recess **338** may be roughly 6" (+/-) long x 6" (+/-) wide by about ½" (+/-) deep, and depressions **342** may be about 3/8" (+/-) deep, and may be sized comfortably to receive a 12 oz (385 mL) drink can.

Figures **7a** to **8h**

Figures **7a** to **8h** show views of an alternate embodiment of a container assembly to that of Figure **1a**. Container assembly **360** is substantially similar to container assembly **20**, and to the extent that they share common features, those features are given common items numbers, although they may differ in size, shape, or aspect ratio. Soft-sided insulated container assembly **360** may differ from container assembly **20** in that container assembly **360** may have a clear front wall panel **362** that does not have an auxiliary wall structure, such as auxiliary pouch **24** mounted thereto. Further, while container assembly **360** may have a receptacle **364**, and a multi-position removable pliable divider, identified as partition **366**, and a mating lid **368** having a seal member **370** engageable with the land region **372** adjacent to the lip edge of the mouth of receptacle **364**, container assembly **360** may not include a removable thermal storage element similar to removable thermal storage element **40** described above.

It may also be noted that container assembly **360** has a different aspect ratio from container assembly **20**, being roughly twice as wide along the long face as along the short face when viewed from above. Partition **366** is an asymmetric divider having a first panel portion **374** of roughly half size, a second panel portion **376** hingedly adjacentlly connected thereto of roughly one quarter size, and a further end portion **378** hingedly connected to portion **376** and having two apertures **380** similar to those described above.

In an alternate embodiment, a thermal storage element of corresponding aspect ratio, otherwise like thermal storage elements **278** or **280**, may be installed in removable

engagement in lid **368**, in a manner analogous to that described above. Whether or not such provision is made, thermal storage elements akin to thermal storage element **40** may be place within container assembly **360**, either at the bottom of the receptacle, or mounted on partition **366**.

Figures **9a** to **9j**

A further alternate embodiment of container assembly is shown in Figures **9a** to **9j**. In this embodiment, a soft sided, insulated container assembly is indicated generally as **400**. Container assembly **400** has a base, identified as bottom panel **402**, an upstanding sidewall **404** having a front panel **406**, a rear panel **408**, a right hand side panel **410**, a left hand side panel **412**, and a top panel finuctioning as a hingedly attached lid **414**. A secondary, or auxiliary wall structure **416** is mounted to front panel **406** in the same general manner as auxiliary wall structure **24**. The wall structure of panels **402**, **406**, **408**, **410**, and **412** is generally as described above in the context of container assembly **20**.

However, rather than having a rigid, molded, water holding internal receptacle, such as might be generally similar to receptacle **30**, container assembly **400** has a peripherally running, inwardly extending reinforced cuff **420**, that is generally rectangular in plan view to conform to the generally rectangular opening **422** defined by the upper edges of wall panels **406**, **408**, **410**, **412**. In cross-section as seen in Figure **9i**, cuff **420** has a first, generally horizontal, relatively short leg **424** that surmounts the underlying wall structure, that wall structure having an outer layer, or covering **426**, typically of a relatively durable wear resistant woven nylon, an internal layer or covering of vinyl, **428**, and a closed cell thermal insulation layer **430** sandwiched between the inner and outer layers. It should be noted that the thicknesses of the various layers are exaggerated in Figure **9i** for the purpose of illustration. Cuff **420** also has an inwardly and downwardly extending skirt, or inner leg **432**. Leg **432** is relatively long as compared to leg **424**. Leg **432** may have a slope of the order of between 4:1 and 10:1 in terms of rise over run, such that a tapered, or convergent opening is formed, defining a peripherally extending land, or land region, **434**. Cuff **420** may typically be made of a substantially rigid material, such as molded plastic. A coarsely woven covering **436** is stretched to overlie cuff **420**, and is secured about its outer peripheral edge at a seam driven through an external edge trim bead **438**, covering **436**, the distal margin of leg **424**, and the edges of inner and outer layers **426**, **428**.

A flexible, waterproof liner **440** is seamed to covering **436** at a mid-level position, and hangs downwardly over the lower margin of cuff **420**, the lower region of liner **440** conforming to the generally rectangular box defined between the sidewall panels, and resting upon base panel **402**. Liner **440** may typically be made of relatively thick waterproof vinyl, and covering **436** may tend to be made from a relatively coarse, relatively high friction woven material which may be cotton, or a cotton blend.

Lid **414** includes a molded structural reinforcement member **444** having a generally rectangular form in plan view with a generally planar peripheral edge portion **446**, a tapered transition wall portion **448**, and a generally planar rectangular central portion **450** that may lie in a plane parallel to the plane of edge portion **446**. The resultant shape may tend to resemble a rectangular pan with turned up edges and a peripheral lip. An optional layer of closed cell thermal insulation **452** may be placed inside the pan, and an external covering layer **454**, which may typically be of woven nylon, to which the insulation may be mounted, may be stretched over the pan, and secured to edge portion **446** by a seam driven through the edges of peripheral bead **456**, layer **454**, and edge portion **446**. Also secured by bead **456** is a relatively rough, coarsely woven inner lid covering **458**, such as may be made of a rough fabric material such as coarse cotton, or a blend therof.

In use, the corresponding mating tapered faces of transition wall portion and leg **434** may tend to engage in an interference jamming fit, like a wedge, or cork, or stopper, in the mount of a bottle. This tendency is enhanced by the use of the roughened surface coverings, that are intended to provide a relatively high level of friction between the surfaces and therefore a tendency to resist, somewhat, the tendency to open unduly easily. In this case the land is, as indicated, merely a cuff of suitable size and location to engage the interfering, protruding bull nose of the lid.

In an optional, alternate embodiment, lid **414** may be provided with a formed plastic peripheral bezel member suitable for receiving a removably engageable thermal storage element, such as removable thermal storage member **40**, described above.

Although the embodiments illustrated and described above are preferred, the principles of the present invention are not limited to this specific example which is given by way of illustration. It is possible to make other embodiments that employ the principles of the invention and that fall within its spirit and scope as defined by the following claims.